SDNVPN Colorado documentation

Release draft (e28b3d2)

OPNFV

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CONTENTS

This document will give the user instructions on how to deploy the SDN VPN scenarios verfied for the Colorado release of the OPNFV platform, using the Fuel installer.

A sister document covers installation using the APEX installer.

CHAPTER

ONE

INTRODUCTION

This document provides guidelines on how to install and configure the os-odl_l2_bgpvpn_ha and os-odl_l2_bgpvpn_ha scenarios of OPNFV including required software and hardware configurations.

Description of bgpvpn scenarios Internal transport tunnel mesh Install Neutron BGPVPN additions (networking-bgpvpn) Neutron odl additions (networking-odl) install and configure Quagga (incl. config on ODL side) configure OVS to connect to ODL and set up the right bridges (network architecture) set up iptables to allow connections between OVS and ODL set up HA proxy so that ODL can be reached

CHAPTER

TWO

HARDWARE REQUIREMENTS

2.1 Bare metal deployment on Pharos Lab

Hardware requirements for bare-metal deployments of the OPNFV infrastucture are specified by the Pharos project. The Pharos project provides an OPNFV hardware specification for configuring your hardware at: http://artifacts.opnfv.org/pharos/docs/pharos-spec.html.

2.2 Virtual deployment hardware requirements

To perform a virtual deployment of an OPNFV scenario on a single host, that host has to meet the hardware requirements outlined in the <missing spec>.

2.3 Additional Hardware requirements

When ODL is used as SDN Controller in an OPNFV, virtual deployment, ODL is running on the OpenStack Controller VMs. it is therefore recommmended to increase the amount of resources these VMs have.

Our recommendation is to have 2 more virtual cores and 8GB more virtual memory. Together with the commonly used recommendation this sums up to:

```
4 virtual cores
16 GB virtual memory
```

See in Installation section how to configure this.

CHAPTER

THREE

PREPARING YOUR HOST TO INSTALL FUEL BY SCRIPT

Before starting the installation of the <scenario> scenario some preparation of the machine that will host the Fuel VM must be done.

3.1 Installation of required packages

To be able to run the installation of the basic opnfv fuel installation the Jumphost (or the host which serves the VMs for the virtual deployment) needs to install the following packages:

```
sudo apt-get install -y git make curl libvirt-bin libpq-dev qemu-kvm \
                        qemu-system tightvncserver virt-manager sshpass \
                        fuseiso genisoimage blackbox xterm python-pip \
                        python-git python-dev python-oslo.config \
                        python-pip python-dev libffi-dev libxml2-dev \
                       libxslt1-dev libffi-dev libxml2-dev libxslt1-dev \
                       expect curl python-netaddr p7zip-full

sudo pip install GitPython pyyaml netaddr paramiko lxml scp \
                 python-novaclient python-neutronclient python-glanceclient \
                 python-keystoneclient debtcollector netifaces enum
```

3.2 Download the source code and artifact

To be able to install the scenario os-odl_l2-bgpvpn one can follow the way CI is deploying the scenario. First of all the opnfv-fuel repo needs to be cloned:

```
git clone ssh://<user>@gerrit.opnfv.org:29418/fuel
```

This command downloads the whole repo fuel. We need now to switch it to the stable Brahmaputra branch:

```
cd fuel
git checkout stable/brahmaputra
```

Now download the appropriate OPNFV Fuel ISO into an appropriate folder:

```
wget http://artifacts.opnfv.org/fuel/brahmaputra/opnfv-brahmaputra.3.0.iso
```

The ISO version may change. Check https://www.opnfv.org/opnfv-brahmaputra-fuel-users to get the latest ISO.

CHAPTER

FOUR

FUEL INSTALLATION AND SCENARIO DEPLOYMENT

This section describes the installation of the os-odl_l2-bgpvpn-ha or os-odl_l2-bgpvpn-noha OPNFV reference platform stack across a server cluster.

4.1 Scenario Preparation

dea.yaml and dha.yaml need to be copied and changed according to the lap/host where you deploy. Copy the full lab config from:

```
cp <path-to-opnfv-fuel-repo>/deploy/config/labs/devel-pipeline/elx \
   <path-to-opnfv-fuel-repo>/deploy/config/labs/devel-pipeline/<your-lab-name>
```

Add at the bottom of dha.yaml.

```
disks:
  fuel: 100G
  controller: 100G
  compute: 100G

define_vms:
  controller:
    vcpu:
      value: 4
    memory:
      attribute_equlas:
        unit: KiB
      value: 16388608
    currentMemory:
      attribute_equlas:
        unit: KiB
      value: 16388608
```

Check if dea.yaml contains all your needed changes.

4.2 Installation procedures

We describe several alternative procedures in the following. Go to

```
cd <opnfv-fuel-repo>/ci
```

4.2.1 Full automatic virtual deployment High Availablity Mode

```
sudo bash ./deploy.sh -b file://<path-to-opnfv-fuel-repo>/config/ -l devel-pipeline -p <your-lab-name
```

4.2.2 Full automatic virtual deployment NO High Availablity Mode

```
sudo bash ./deploy.sh -b file://<path-to-opnfv-fuel-repo>/config/ -l devel-pipeline -p <your-lab-name
```

4.2.3 Automatic Fuel installation and manual scenario deployment

```
sudo bash ./deploy.sh -b file://<path-to-opnfv-fuel-repo>/config/ -l devel-pipeline -p <your-lab-name
```

Check **Configuring-SDNVPN-features_** how to manually activate the features.

With -e option the installer does not launch environment deployment, so a user can do some modification before the scenario is really deployed. Another interesting option is the -f option which deploys the scenario on existing Fuel.

CHAPTER

FIVE

REFERENCES

5.1 OPNFV

1. OPNFV Home Page
2. OPNFV documentation- and software downloads

5.2 OpenStack

3. OpenStack Liberty Release artifacts
4. OpenStack documentation

5.3 OpenDaylight

5. OpenDaylight artifacts

5.4 Fuel

6. The Fuel OpenStack project
7. Fuel documentation overview
8. Fuel planning guide
9. Fuel quick start guide
10. Fuel operations guide
11. Fuel Plugin Developers Guide
12. Fuel OpenStack Hardware Compatibility List

5.5 Fuel in OPNFV

13. OPNFV Installation instruction for the Brahmaputra release of OPNFV when using Fuel as a deployment tool
14. OPNFV Build instruction for the Brahmaputra release of OPNFV when using Fuel as a deployment tool

15. OPNFV Release Note for the Brahmaputra release of OPNFV when using Fuel as a deployment tool

CHAPTER

SIX

INDICES

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